

REMARKS

STATUS OF THE CLAIMS

Claims 1-19 were pending and examined. By amendment herein, claim 1 has been amended to further clarify that the modified plant zinc finger protein has a modified amino acid sequence as compared to a naturally occurring plant zinc finger protein. Specifically, the modification comprises modifying the amino acid sequence of the protein to make the regions between adjacent fingers shorter than those that occur in many naturally occurring plant zinc finger proteins, such that the zinc fingers are present in a tandem array. Support for the amendment to claim 1 can be found, for example, on page 18, line 25 to page 19, line 3; original claims 5, 12 and 13. Accordingly, claims 5, 12 and 13 have been canceled, without prejudice or disclaimer. Claim 14 has been amended to set forth functional domains that are obtained from proteins known to function as transcription modulators in plants, as described for example, on page 23, line 26 to page 24, line 7.

New claims 21-33 have been added and are directed to modified plant zinc finger proteins in which one or more amino acid residues in the recognition region of one or more component zinc fingers has been substituted with another amino acid residue. Support for the new claims can be found throughout the specification as filed, for example, on page 20, lines 1-7; page 20, lines 23 to page 21, line 4; Table 2 on page 41 (new claims 21 and 22); originals claim 2-11 (new claims 23-32, respectively); and page 23, line 26 to page 24, line 7 (new claim 33).

Thus, claims 1-4, 6-11, 14, and 17-33 are pending as shown above.

35 U.S.C. § 112, First Paragraph, Written Description

Previous claims 1-19 were rejected as allegedly not described in the specification as filed in such a way as to reasonably convey to the skilled artisan that applicants were in possession of the claimed subject matter. (Final Office Action, pages 2-5).

As discussed during the telephone interview and reflected by the above claim amendments, the pending claims are directed to molecules clearly described in the specification as filed. In particular, the claims have been amended to make explicit that the claimed modified plant zinc finger proteins necessarily have a different amino acid sequence than naturally occurring plant zinc finger proteins, either because the inter-finger spacing is shortened (claim 1 and claims dependent therefrom) and/or because the amino acid sequence of the recognition region is altered as compared to a naturally occurring zinc finger protein (claim 21 and claims

dependent therefrom). As discussed during the telephonic interview, these modifications are clearly set forth in the specification as filed.

With regard to previous claims 14-16, Applicants note that the claims have been amended to recite functional domains from plants that are known to be functional transcription modulators in plants. Accordingly, the rejection with regard to these claims has been obviated.

Thus the specification provides adequate written description for the claimed subject matter, and withdrawal of the rejection is requested.

35 U.S.C. 112, First Paragraph, Enablement

Claims 1-19 were rejected under 35 U.S.C. 112, first paragraph as allegedly not enabled by the specification as filed. (Final Office Action, pages 5 to 10).

As discussed during the telephone interview and reflected by the above claim amendments, the specification fully enables the pending claims. The Examiner's concerns about structure, particularly what modifications are encompassed, have been addressed by the above amendments. Similarly, the concerns about functional domains have also been obviated. Accordingly, Applicants respectfully request withdrawal of the rejection.

35 U.S.C. 112, Second Paragraph

Previous claims 1, 12, 14, 15, 16 and 17 and claims dependent therefrom were rejected under 35 U.S.C. 112, second paragraph as allegedly indefinite. (Final Office Action, pages 10-13).

The terms "modified," "target sequence" "functional domain," "repressive domain," and "activation domain" were discussed in detail during the interview and it was agreed that they were not indefinite in view of the specification and in view of the foregoing amendments to the claims. Accordingly, the rejections under 35 U.S.C. § 112, second paragraph have been obviated.

35 U.S.C. § 102

Claims 1-10 and 12-19 were rejected as allegedly anticipated by various references. (Final Office Action, pages 13-16).

It was discussed during the telephone interview that the foregoing amendments would obviate the rejections under § 102 because none of the references describe or demonstrate a zinc finger protein that has been engineered to bind to a target site and whose amino acid sequence has been modified as compared to a naturally occurring plant zinc finger protein (*i.e.*, in its inter-

finger spacing and/or in one or more of the recognition regions of one or more of the zinc finger modules). Specifically, Aoyama's protein includes a naturally occurring non-plant ZFP that includes no amino acid residue modifications. Similarly, Takatsuji and Coupland do not describe plant zinc finger proteins which have been engineered to bind to a target site, as claimed.

In sum, there is not identity between the claimed molecules and the disclosures of Aoyama, Takatsuji and/or Coupland and, accordingly, anticipation cannot be established. Therefore, withdrawal of the rejections based on 35 U.S.C. 102 is respectfully requested.

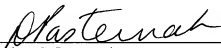
CONCLUSION

Applicants submit that the claims are in condition for allowance and request early notification to that effect. If the Examiner has any further issues or wishes to discuss any of the foregoing, they are invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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By: _____


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